

WHAT IS CLAIMED IS:

1. An electronic navigational aid device, comprising:  
a processor; and  
5 a memory adapted to communicate with the processor,  
wherein the device is adapted to be transported on a road, and  
wherein the processor and the memory are adapted to cooperate to provide  
an address that is proximate to the device.
- 10 2. The device of claim 1, wherein the processor and the memory are adapted to  
cooperate to estimate the address that is proximate to the navigational device.
- 15 3. The device of claim 2, wherein the processor and the memory are adapted to  
cooperate to determine a direction of travel and to estimate the address that is  
proximate to the navigational device along a driving side of the road according to  
local driving rules.
- 20 4. The device of claim 2, wherein the processor and the memory are adapted to  
cooperate to estimate addresses proximate to the navigational device by being  
adapted to cooperate to:  
estimate a current position of the navigational device,  
estimate a road segment length proximate to an address range associated  
with the current position of the navigational device, and  
25 estimate a distance along the road segment length to the current position of  
the navigational device.
5. The device of claim 1, wherein the processor and the memory are adapted to  
extract road data from a database.

6. The device of claim 1, wherein the processor and the memory are adapted to extract address number ranges from a database.

5 7. The device of claim 1, further comprising a display upon which the address is displayed.

8. The device of claim 7, wherein the displayed address on the display includes an address number and a road name.

10 9. The device of claim 1, wherein the electronic navigational aid device comprises a portable electronic navigational aid device.

15 10. The device of claim 9, wherein the portable electronic navigational aid device includes a person digital assistant (PDA).

11. The device of claim 9, wherein the portable electronic navigational aid device includes a wireless communication device.

20 12. A navigation system, comprising:  
a mass data storage adapted to store navigation data;  
a server adapted to communicate with the mass data storage; and  
a navigational aid device adapted to communicate with and retrieve  
navigation data from the server via a communication channel,  
wherein the device is adapted to be transported on a road,  
25 wherein the system is adapted to display an address along the road on the device, and  
wherein the address is proximate to the device.

13. The navigation system of claim 12, wherein the communication channel includes a wireless channel.

14. The navigation system of claim 12, wherein the server includes a remote server.

15. The navigation system of claim 12, wherein the server includes a processor adapted to respond to a request from the navigational aid device by performing calculations on the navigation data and transmitting the results to the navigational aid device.

16. The navigation system of claim 12, wherein the navigational aid device is adapted to communicate with and retrieve navigation data from the server using streaming data.

17. The navigation system of claim 12, wherein the navigational aid device is adapted to communicate with and retrieve navigation data from the server using cellular communication technology.

18. The navigation system of claim 12, wherein:  
the navigational aid device includes a processor in communication with a memory; and

the processor and the memory of the navigational aid device are adapted to cooperate to display the address on the device.

19. The navigation system of claim 12, wherein the system is adapted to cooperate to determine a direction of travel and to estimate the address proximate to the navigational device along a driving side of the road according to local driving

rules.

20. The navigation system of claim 12, wherein the processor and the memory are adapted to cooperate to estimate addresses proximate to the navigational device by being adapted to cooperate to:

estimate a current position of the navigational device,  
estimate a road segment length proximate to an address range associated with the current position of the navigational device, and  
estimate a distance along the road segment length to the current position of the navigational device.

21. The navigation system of claim 12, further comprising a database, wherein the system is adapted to extract road data and address number ranges from the database.

22. The navigation system of claim 12, wherein the navigational aid device further includes a display upon which the address is displayed.

23. A method, comprising:  
estimating an address proximate to a navigational aid device; and  
displaying the address on the navigational aid device.

24. The method of claim 23, wherein estimating an address proximate to a navigational device includes identifying a road upon which the navigational aid device is being transported.

25. The method of claim 24, wherein identifying a road upon which the navigational aid device is being transported includes:

extracting road data based on a position and an accuracy of the navigational aid device; and

selecting a best road data element based on a comparison between both the road data and the travel direction and the position.

5

26. The method of claim 24, wherein estimating an address proximate to a navigational aid device further includes determining a range of addresses along the road proximate to the navigational aid device.

10

27. The method of claim 26, wherein estimating an address proximate to a navigational aid device further includes:

estimating an address number based on a position of the navigational aid device,

estimating a road length associated with the range of addresses, and

15

estimating a distance from one end of the road length to the position of the navigational aid device.

20

28. The method of claim 23, wherein estimating an address proximate to a navigational device includes obtaining information regarding a position and a travel direction for the navigational device.

25

29. The method of claim 28, wherein estimating an address proximate to a navigational device further includes obtaining information regarding accuracy of the navigational device and road data.

30. The method of claim 23, wherein estimating an address proximate to a navigational device and displaying the address on the navigational device are triggered by periodic update events.

31. A method, comprising:  
accessing road data that is associated with a road upon which a navigational  
aid device is being transported;  
selecting a road data storage element from the road data based on a position  
of the navigational aid device;  
extracting address number ranges associated with the road data storage  
element;  
selecting an address number range from the extracted address number  
ranges;  
estimating an address number from the address number range; and  
displaying the estimated address number.
32. The method of claim 31, further comprising periodically displaying an  
updated estimated address number.
33. The method of claim 31, wherein accessing road data includes extracting  
road data from a database based on a position and an accuracy of the navigational  
aid device.
34. The method of claim 31, wherein selecting a road data storage element from  
the road data includes comparing the road data to a travel direction and a position of  
the navigational aid device to find a road data storage element having a best match.
35. The method of claim 31, wherein selecting an address number range from  
the extracted address number ranges is based on a travel direction of the  
navigational device.
36. The method of claim 31, wherein estimating the address number from the

address number range is based on a position of the navigational aid device, a road length for the address range, and a distance along the road length to the position of the navigational aid device.

- 5      37.      The method of claim 31, wherein displaying the estimated address number includes displaying a street name associated with the address number.